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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON DC 20554

IN THE MATTER OF	)	CC DOCKET NO. 96-45
	)	
STATE FORWARD - LOOKING	)	CC DOCKET NO. 97-160
COST STUDIES FOR UNIVERSAL	)	
SERVICE SUPPORT	)	DA 98- 1055
	)	APD NO. 98-1

COMMENTS OF THE ASSOCIATION OF COMPETITIVE TELECOMMUNICATION PROVIDERS

Pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. § 1.415, the Association of Competitive Telecommunication Providers, Inc. ("APCT"), by its attorneys, submits these comments in response to the FCC's Public Notice dated June 4, 1998[1], in the above-referenced proceeding (the "FCC Notice"). In particular, the APCT responds to the economic model submitted through a letter dated May 8, 1998, by the Telecommunications Regulatory Board of Puerto Rico (hereinafter referred to as the "PRTRB") and received by the FCC on May 26, 1998.

INTRODUCTION AND SUMMARY

The APCT is a trade association formed as a non-profit Puerto Rico corporation whose members constitute substantially all the major competitive wireline and wireless

[1] Public Notice, Common Carrier Bureau Seeks Comments on State Forward-Looking Cost Studies for Universal Service Support, DA 98-1055 (rel. June 4,1998).

telecommunications carriers operating in Puerto Rico. Its members include AT&T of Puerto Rico, Inc., Cellular Communications of Puerto Rico, Inc., Celpage, Inc., Coquí Net, Insticall, Cortelco, Mtel PR, Inc., Sprint Caribe, Telefónica Larga Distancia, Teléfonos Públicos de Puerto Rico and others. The APCT's primary goal is to facilitate the deployment and development of telecommunications services and technologies in the private sector by promoting just and effective competition within the telecommunications market in Puerto Rico. The APCT therefore has standing as party in interest to file formal comments in this proceeding.

The FCC notice seeks comments on whether the cost studies submitted by the states meet the criteria specified in the Universal Service order and whether or not they should be approved by the Commission.

Pursuant to a letter dated May 8, 1998 and received by the FCC on May 26, 1998, the Government of Puerto Rico, through the PRTRB, submitted to the FCC the model it had selected to comply with Paragraph 250 of the Universal Service Order.[2] The PRTRB selected as its model a modified version of the Benchmark Cost Proxy Model (the "Proposed Model"). Puerto Rico's Proposed Model establishes an aggregate annual support for Puerto Rico of $190,872,808.00. For purposes of discussion and simplicity we will round up this number to $191 million. Applying the FCC's 75/25 formula for allocating universal service obligations between the federal and state jurisdictions, 25% of this amount, or $47.75 million, would come from the federal government and 75%, or $143.25 million, would have to be contributed

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[2] In the Matter of Federal - State Joint Board on Universal Service, Report and Order, CC Docket No. 96-45, 12 FCC Rcd 8776 (1997) (the "Universal Service Order").

thought a tax levied on Puerto Rico's telecommunications companies. It is evident that the only way in which this tax could be paid by the telecommunications companies would be by passing it net to their customers. Therefore, if the Proposed Model is approved, the result will be an increase of 20% of the cost of telecommunications services to customers in Puerto Rico.

The APCT opposes the Proposed Model, submitting that it fails to meet the criteria specified in the Universal Service Order. APCT's opposition also is based on the PRTRB's failure to comply with the applicable Puerto Rico procedural laws and regulations required for approving the Proposed Model. The Proposed Model, was adopted by the PRTRB in an ex parte manner, without giving the affected telecommunications companies the opportunity to review the economic studies and costs analysis required for such model; without allowing the companies to submit their own studies and formulas; and denying them the opportunity to be heard, all in violation of their procedural due process rights.

Notwithstanding its procedural defects, Puerto Rico's Proposed Model fails to comply with several of the criteria established by the Commission in the Universal Service Order. In addition, such a high universal service fund constitutes essentially an imposition on the telecommunications companies of Puerto Rico to subsidize the Puerto Rico Telephone Company's ("PRTC's") inefficient operations.

DISCUSSION

A. ADOPTION OF PUERTO RICO'S PROPOSED MODEL VIOLATES PUERTO RICO'S LAWS AND REGULATIONS

The PRTRB adopted the Proposed Model ex parte, without complying with Puerto Rico's laws and regulations applicable to the rule making procedures imposed on administrative agencies.

Both the Uniform Administrative Procedure Act of Puerto Rico[3] and the Puerto Rico Telecommunications Act of 1996,[4] ("the Telecommunications Act"), impose on the PRTRB the legal obligation to follow specific procedures when it exercises its rulemaking powers. In this regard, the PRTRB adopted a General Practice and Procedure Regulation dated August 5, 1998 (the "Regulation"). Section 10 of the Regulation, calls for specific requirements to be followed in the rule making process. Both the Telecommunications Act and the Regulation require the PRTRB to issue a public notice of a proposed regulation and a comment period. In adopting Puerto Rico's Proposed Model, the PRTRB violated the applicable laws and regulations denying interested parties their right to be heard. The haste in which the PRTRB adopted the Proposed Model without complying with the applicable laws and regulations is evidenced in PRTRB's letter dated May 8, 1998 submitting the economic model: "This document is filed to be in compliance with FCC 97-157."[5] This haste is further evidenced in the next to last paragraph of PRTRB's notification of its cost model:

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[3] Act No. 170 of August 12, 1998; Puerto Rico Laws Ann. Tit. 3, ' 2101 et. seq.

[4] Act No. 213 of September 12, 1996; Puerto Rico Laws Ann. Tit. 27, ' 265 et. seq.

[5] PRTRB letter dated May 8, 1998 to Ms. Magalie Roman Salas, submitting economic model.

> "We submit this report with misgivings. Our review of the models indicates that the models are not yet ready to provide a proper foundation for public policy. However, despite our misgivings, the FCC requirement to submit cost studies is upon us." [6]

It should be pointed out that the APCT is preparing a petition requesting the PRTRB to withdraw the Proposed Model from the FCC.

B. PUERTO RICO'S PROPOSED COST MODEL FAILS TO MEET REQUIREMENTS ESTABLISHED IN THE UNIVERSAL SERVICE ORDER

The APCT commissioned A. Daniel Kelley, Ph.D. of HAI Consulting, Inc., to analyze Puerto Rico's Proposed Model. Dr. Kelley's report in the form of a declaration is attached as Exhibit 1. Dr. Kelley's report is conclusive in indicating that the Proposed Model does not comply with the requirements established by the Commission's Universal Service Order. In his report, Dr. Kelley concludes that the PRTRB study fails to estimate valid forward looking costs and instead used embedded costs as expense assumptions.

We could assume that the embedded costs used by PRTRB come from information supplied by the PRTC. However, the APCT and its members have been denied access to PRTC's cost information. PRTRB'S expressed misgivings in submitting the Proposed Model is also a clear message to the FCC that even the PRTRB does not place any trust in the numbers and information submitted to it by the PRTC. Therefore, it is no surprise that the Proposed Model should not be analyzed in the abstract and should be viewed in light of PRTC's proposal to maintain Universal Service support in all "insular areas" at their current levels should any proxy model reduce support payments below their current levels ("PRTC's

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6 PRTRB letter dated May 8, 1998 to FCC Common Carrier Bureau, notifying model selection.

Proposal"). It is evident that PRTRB's Proposed Model seeks to ensure that if PRTC's Proposal is not adopted, Puerto Rico will at least obtain more federal support than it would under the proposed proxy models.

Puerto Rico's telecommunications companies should not pay for PRTC's operational inefficiencies. The APCT has stated before this Commission[7] that as a government-owned monopoly, PRTC has been totally insulated from the pressures of efficiency, service quality and price that competition brings to the market. For this reason, the PRTC, through its Proposal, and now the PRTRB, through the Proposed Model, seek such a large universal service contribution. APCT respectfully submits that the FCC should put a stop to PRTC's and PRTRB's attempt to reverse engineer the Universal Service contribution. Any cost model approved by the FCC for Puerto Rico should contain safeguards and conditions that encourage competition and reduce PRTC's costs. Therefore, in approving any cost model for Puerto Rico, the FCC should impose on the PRTC the following conditions as more specifically explained in APCT's Comments of May 15, 1998, before the FCC, CC Docket Nos. 96-45, 97-160; DA 98-715:

1. Eliminate cross-subsidies and other anti-competitive actions
2. PRTC's rates and charges must become cost-based
3. Order PRTC to submit quarterly reports on the progress of its pro-competitive and streamlining efforts

[7] In the matter of Proposal to Revise the Methodology for Determining Universal Support, CC Docket Nos. 96-45 and 97-160, comments of the Association of Competitive Telecommunication Providers (filed May 15, 1998).

CONCLUSION

PRTRB's own recognition that the Proposed Model is "not yet ready to provide proper foundation for public policy" cries for the FCC to reject PRTRB's Proposed Model. PRTRB's express misgivings reflect its lack of information required to develop a responsible model and a mistrust in PRTC's own numbers and information.

Furthermore, PRTRB's failure to comply with the applicable laws and regulations in the adoption of the Proposed Model constitutes sufficient basis for rejecting the Proposed Model irrespective of its results. In any event, as documented in the report of Dr. Kelley commissioned by the APCT, the Proposed Model does not comply with the requirements of the Universal Service Order and should therefore be rejected.

WHERETOFORE, the APCT requests the FCC to reject PRTRB's Proposed Model.

RESPECTFULLY SUBMITTED,

ASSOCIATION OF COMPETITIVE
TELECOMMUNICATION PROVIDERS, INC.

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June 25, 1998

Its Attorney

DCDOCS: 130535.1 (2spz01!.doc)

DECLARATION OF A. DANIEL KELLEY

I have prepared this Declaration at the request of Association of Competitive Telecommunications Providers of Puerto Rico ("ACTP"). The purpose of the Declaration is to respond to the Public Notice issued by the Commission on June 4, 1998 asking for comments on the "cost study" filed by the Government of Puerto Rico Telecommunications Regulatory Board ("PRTRB"). The PRTRB modifies the BCPM model by increasing the values of many of the default BCPM inputs. The result is a $190,972,908.00 subsidy for Puerto Rico.

I conclude that there are several fundamental flaws with the PRTRB study. The study does not meet the requirements for forward-looking cost determinations established by the Commission in CC Docket No. 96-45.[1] The PRTRB has used embedded rather than forward-looking expenses. The "unique service characteristics" of Puerto Rico do not justify the use of either the BCPM defaults or the full embedded costs used by the PRTRB.

QUALIFICATIONS

My professional experience began in 1972 at the Antitrust Division of the U.S. Department of Justice where I analyzed mergers, acquisitions and business practices in a number of industries, including telecommunications. While at the Department of Justice, I was a member of the U.S. v. AT&T economics staff. In 1979, I moved to the Federal Communications Commission ("FCC") where I held positions as Senior Economist in the Common Carrier Bureau and the Office of Plans and Policy, and also served as Special Assistant to the Chairman. After leaving the FCC, I was a Project Manager and Senior Economist at ICF, Incorporated, a public policy consulting firm. From September 1984 through July of 1990, I was employed by MCI

[1] See May 8, 1998 Report and Order.

Communications Corporation as its Director of Regulatory Policy. My current position is Senior Vice President of HAI Consulting, Inc. (formerly Hatfield Associates, Inc.). I conduct economic and policy studies on a wide variety of telecommunications issues, including local exchange competition, dominant firm regulation, and the cost of local service. I have advised foreign government officials on telecommunications policy matters and have taught seminars in regulatory economics in a number of countries.

I received a Bachelor of Arts degree in Economics from the University of Colorado in 1969, a Master of Arts degree in Economics from the University of Oregon in 1971 and a Ph.D. in Economics from the University of Oregon in 1976.

I have testified on telecommunications issues before this Commission, the California, Colorado, Connecticut, Florida, Georgia, Hawaii, Maryland, Massachusetts, Michigan, New York, Oregon, Pennsylvania and Utah Commissions, as well as the Federal-State Joint Board investigating universal service reform. Much of my testimony in recent years has dealt with cost modeling issues and universal service reform. A copy of my resume is attached.

PRTRB STUDY

The PRTRB has adopted the BCPM as its platform for measuring economic costs. However, rather than using the default values for expenses used by the BCPM developers, the PRTRB uses its own input values for expenses. According to the PRTRB, these input values are used " . . . to model specifically Puerto Rico's unique service characteristcs."[2] The PRTRB fails to adequately explain exactly how it derived its input factors. However, the values for most accounts appear to be based on PRTC's embedded costs. Table 1 compares the PRTRB's

[2] PRTRB letter, p. 1.

investment related expense ratios with 1997 PRTC embedded costs and the BCPM defaults.[3] The Table shows that the majority of the PRTRB factors are larger than the default BCPM levels, but all of the factors are close to PRTC embedded cost levels.

Table 1
Investment Factors

Account	Category	BCPM Default	PRTRB Value	PRTC Embedded
6112	Motor Vehicle	0.739%	1.251%	1.191%
6114	Special Purpose Vehicle	0.001%	0.000%	0.000%
6115	Garage	0.032%	0.004%	0.003%
6116	Other Work Equipment	0.627%	0.798%	0.770%
6122	Furniture	0.233%	0.572%	0.586%
6123	Office Support	0.701%	0.652%	0.633%
6124	Computers	2.965%	2.510%	2.644%

Table 2 compares PRTRB monthly per line operating expenses with the embedded PRTC expenses and the default BCPM levels.[4] The key point in understanding the results is that the embedded expenses are for the company as a whole, even though basic universal service represents only a portion of the company's activities. Nevertheless, several accounts show per line expenses higher than embedded. The PRTRB amounts for Services and Marketing accounts are smaller than embedded, but still substantial when considering the fact that Marketing is generally not required for basic universal service and the Services account includes the cost of establishing accounts. Network operations expenses and General and Administrative expenses are reduced relative to total company embedded costs, but are still quite high in relation to the BCPM defaults. The PRTRB Network Operations factor exceeds the BCPM default by 180

[3] Embedded factors are computed from the 1997 Statisitcs of Common Carriers ("SOCC").
[4] Account 6310 is excluded because the embedded amount reported in the SOCC appears to be anomalous.

percent while the General and Administrative expense factor exceeds the BCPM default by 103 percent.

Table 2
Per Line Expenses

		1	2	3	4	5
Account	Category	PRTRB Value	PRTC Embedded	% Difference 2-1	BCPM Default	% Difference 1-4
6110	Network Support Expenses	0.15	0.13	16%	0.15	0%
6120	General Support	4.68	4.32	8%	1.20	290%
6210	COE Switching	1.79	1.76	2%	0.34	426%
6230	COE Transmission	1.31	1.47	-12%	0.23	470%
6411	Poles	0.13	0.11	13%	2.76	-95%
6421	Aerial Cable	3.41	3.30	3%	-	n/a
6422	UG Cable	0.60	0.66	-11%	-	n/a
6423	Buried Cable	1.09	1.04	5%	-	n/a
6510	Other Property Plant	0.12	0.15	-28%	0.03	300%
6530	Network Operations	3.73	5.28	-42%	1.33	180%
6610	Marketing	0.75	2.87	-283%	0.35	114%
6620	Services	3.39	7.83	-131%	2.42	40%
6710	Exec. And Planning	0.35	0.38	-8%	0.14	150%
6720	General and Admin	4.37	6.74	-54%	2.15	103%
6790	Uncollectibles	-	-	0%	0.17	-100%

THE PRTRB MODEL FAILS TO SATISFY COMMISSION REQUIREMENTS

The Commission established criteria for universal service cost studies in a Report and Order released in CC Docket No. 96-45 on May 8, 1997. The PRTRB fails to comply with several of these requirements. While I believe that the BCPM Model used by PRTRB fails to estimate efficient local network investments, I will concentrate on the issues surrounding the input assumptions used by the PRTRB.[5]

The Commission requires that "only long-run forward-looking cost may be included." The Commission specifically rules out the use of embedded costs. As noted above, the PRTRB has effectively used embedded costs. The only explanation given is that there are "unique service characteristics in Puerto Rico."

There are many reasons why embedded costs of telephone companies are generally higher than economic costs. Foremost among these is that incumbent local telephone companies have not been, and are not today, subject to the cost-reducing discipline of competition. This problem is exacerbated for firms that are not privately held. PRTC's embedded costs are significantly higher than those of other telephone operating companies.[6]

As Table 3 shows, there are only 163 lines per employee for PRTC compared to 445 lines for the average U.S. telephone company. Compensation per employee for PRTC is higher than compensation per employee for the average U.S. telephone company, but in-line with some potential benchmark companies, such as Sprint Florida and GTE Florida, which are approximately PRTC's size. However, as discussed further below, average wages in Puerto Rico are substantially lower than those in the U.S.

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[5] See December 23, 1997 ex parte letter from Richard N. Clarke, AT&T, to Ms. Magalie Roman Salas, in CC Docket No. 96-45 for an discussion of how the BCPM fails to accurately locate customers. ex parte for a description of the basic underlying problems with the BCPM Model.

Table 3
Efficiency Measures

	PRTC	All LECs	Non-RBOCs	GTE Florida	Sprint Florida
Access Lines	1,282,756	193,614,850	34,243,933	2,624,110	2,177,987
Employees	7,863	434,771	96,594	7,473	5,714
Compensation ($000)	417,408	22,196,451	4,774,778	307,769	333,257
Lines/Employee	163	445	355	351	381
Compensation /Employee	53,085	51,053	49,431	41,184	58,323

The PRTRB does not explain the "unique service characteristics of Puerto Rico." An analysis of general economic statistics for the Commonwealth of Puerto Rico shows that, if anything, the "unique characteristics" should lead to lower, not higher, costs. First, operating costs in Puerto Rico should not be higher than operating costs in the lower 48 states. Labor costs explain a high percentage of operating expenses. Salaries, wages, and benefits account for 36 percent of plant specific operations expenses for non-RBOCs.[7] The average hourly wage in Puerto Rico is only 60 percent of the hourly wage in the U.S.[8] Consequently, forward-looking operating expenses for PRTC should be substantially lower than those in the mainland U.S.

Second, PRTC is not a small telephone company. With 1.3 million lines, it is the 12th largest U.S. telephone company. Therefore, PRTC is in a position to obtain reasonable discounts on the purchase of equipment. It might be argued that shipping costs for equipment are higher due to the need to ship over water. However, the market for telecommunications equipment is

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[6] PRTC's lines per employee figure approximate those of government monopolies in other countries. This is not surprising given that PRTC is a government-owned monopoly. But the evidence shows that costs in these government-owned monopolies far exceed efficient levels.
[7] See SOCC, p. 36.

international in scope. Mainland U.S. telephone companies have been known to purchase telephone poles from Finland.

Hawaii provides another example of an insular economy. The Hawaii Commission has notified this Commission that it intends to use a modified version of the HAI Model to estimate universal service costs.[9] My understanding is that the Hawaii Commission did not modify equipment prices, but did modify labor rates to reflect the fact that costs are higher in Hawaii.

Third, population density, a key driver of forward-looking telephone costs, is high in Puerto Rico, suggesting that costs per line should be lower for PRTC than for the average telephone company. Population per square mile is 1,028 in Puerto Rico compared to 70 for the United States as a whole.[10] Although telephone penetration is lower in Puerto Rico than in the lower 48 states, this should not offset the effects of density on costs in Puerto Rico because density in Puerto Rico is so high.

Finally, geographic features do not explain PRTC's excessive costs. Both the BCPM and the HM 5.0a have built-in adjustments for factors such as terrain. As noted earlier, the fact that Puerto Rico is insular does not explain the large discrepancy between costs. GTE-Hawaii, has total embedded plant-specific operating expenses per line substantially less than those of PRTC, even though GTE Hawaii has substantially higher labor rates. GTE Hawaii's embedded plant specific operating expense per line was $169 per year in 1997 compared with a PRTC figure of $238.[11]

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[8] See http://www.pr-eda.com/workforc.html, page 3 of 3.
[9] See http://www.fcc.gov/e-file/cost_studies.
[10] Statistical Abstract of the United States, 1997, Table No. 1311. Population density is higher in Puerto Rico than in the Virgin Islands, Guam, American Samoa and the Northern Mariana Islands. Id.
[11] Computed from SOCC.

The fourth Commission requirement is that "the rate of return must be either the authorized federal rate of return on interstate services, currently 11.25 percent, or the state's prescribed rate of return for intrastate services." This is a case where the unique characteristics of Puerto Rico call for a much smaller rate of return. The PRTC is a government owned utility. Therefore, its cost of capital is that of the government. Puerto Rico development bonds are currently yielding 5.12 percent.[12] Therefore, the 11.25 percent BCPM default is too large by a factor of at least two. Moreover, because of exemptions granted to companies operating in Puerto Rico, PRTC is not subject to federal income tax.

Commission requirement number 8 is that the model outputs should be plausible. This is not the case for the PRTRB study. The $190,000,000 plus subsidy for the commonwealth of Puerto Rico represents over $150 per year for every switched access line on the island. If this number were to be extrapolated for all local exchange telephone companies, the resulting nationwide universal service subsidy would be almost $25 billion. Moreover, it is simply implausible that a forward-looking study could result in a subsidy requirement that is higher than the current requirement, which has always been based on embedded costs.

Commission requirement number 9 is that "the cost study must include the capability to examine and modify the critical assumptions and engineering principles." The PRTRB letter does not attempt to explain or justify the input assumptions that were adopted.

I believe that the results of the HM 5.0a, adjusted for the proper rate of return and income tax level, provide a more reasonable estimate of universal service costs for Puerto Rico. The default subsidy generated by HM 5.0a for Puerto Rico is approximately $5 million. When the

[12] See The Wall Street Journal, June 23, 1998, p. C24.

HM 5.0 is run with the appropriate rate of return and tax inputs, the subsidy falls to $326,000. The default BCPM subsidy falls to $3.2 million when the appropriate tax and return assumptions are used. When the BCPM is run with the PRTRB inputs, but with the lower rate of return and lower tax rate, the subsidy falls to approximately $92,000,000.

CONCLUSIONS

The PRTRB study fails to estimate valid forward-looking costs. Embedded instead of forward-looking economic costs are used as the basis for expense assumptions. The PRTRB's use of embedded costs is especially troublesome because PRTC's embedded costs are unusually high compared to most U.S. telephone companies. The PRTRB also failed to adjust inputs to reflect the lower taxes and cost of capital it enjoys. These factors, taken together with the fact that the BCPM generates excessive investments, result in a model that produces unreasonable results.

I declare, under penalty of perjury, that the foregoing is true and correct. Executed on June 24, 1998.

A. Daniel Kelley

Daniel Kelley

PROFESSIONAL EXPERIENCE:

Senior Vice President, HAI Consulting, Inc., Boulder Colorado (current position).

Conducting economic and applied policy analysis of domestic and international telecommunications public policy and business issues. Recent projects have included advising Central and Eastern European Governments on privatization and competition matters, assisting a private client with entry into the long distance market in Mexico, analyzing competitive conditions in cellular radio markets, analyzing the economics of cable television regulation, analyzing the prospects for local competition and measuring the economic cost of local service.

Director of Regulatory Policy, MCI Communications Corporation, 1984-1990.

Responsible for developing and implementing MCI's public policy positions on issues such as dominant carrier regulation, Open Network Architecture, accounting separations and Bell Operating Company line of business restrictions. Also managed an interdisciplinary group of economists, engineers and lawyers engaged in analyzing AT&T and local telephone company tariffs.

Senior Economist and Project Manager, ICF Incorporated, 1982-1984.

Telecommunications and antitrust projects included: forecasting long distance telephone rates; analysis of the competitive effects of AT&T's long distance rate structures; a study of optimal firm size for cellular radio markets; analysis of the FCC's Financial Interest and Syndication Rules, and competitive analysis of mergers and acquisitions in a variety of industries.

Senior Economist, Federal Communications Commission, 1979-1982.

Served as Special Assistant to the Chairman during 1980-1981. Advised the Chairman on proposed regulatory changes in the broadcasting, cable television and telephone industries; analyzed legislation and drafted Congressional testimony. Coordinated Bureau and Office efforts on major common carrier matters such as the Second Computer Inquiry and the Competitive Carrier Rulemaking. Also held Senior Economist positions in the Office of Plans and Policy and the Common Carrier Bureau.

Staff Economist, U.S. Department of Justice, 1972-1979.

Analyzed proposals for restructuring the Bell System as a member of the economic staff of U.S. v. AT&T; investigated the competitive effects of mergers and business practices in a wide variety of industries.

EDUCATION:

1976	Ph.D. in Economics	University of Oregon
1971	M.A. in Economics	University of Oregon
1969	B.A. in Economics	University of Colorado

PUBLICATIONS AND COMPLETED RESEARCH:

"Cable and Wireless Alternatives to Residential Local Exchange Service," Berkeley Conference on Convergence and Digital Technology (1997), with Alan J. Boyer and David M. Nugent.

"A General Approach to Local Exchange Carrier Pricing and Interconnection Issues," Telecommunications Policy Research Conference, (1992), with Robert A. Mercer.

"Gigabit Networks: Is Access a Problem?" IEEE Gigabit Networking Workshop (1992).

"Advances in Network Technology" in Barry Cole, ed., After the Break-Up: Assessing the New Post-AT&T Divestiture Era (1991).

"Alternatives to Rate of Return Regulation: Deregulation or Reform?" in Alternatives to Rate Base Regulation in the Telecommunications Industry, NARUC (1988).

"AT&T Optional Calling Plans: Promotional or Predatory" in Harry M. Trebing, ed., Impact of Deregulation and Market Forces on Public Utilities: The Future Role of Regulation (1985).

"The Economics of Copyright Controversies in Communications" in Vincent Mosco, ed., Policy Research in Telecommunications (1984).

"Deregulation After Divestiture: The Effect of the AT&T Settlement on Competition," FCC, OPP Working Paper No. 8 (1982).

"The Transition to Structural Telecommunications Regulation," in Harry M. Trebing, ed., New Challenges for the 1980's (1982), with Charles D. Ferris.

"Social Objectives and Competition in Common Carrier Communications: Incompatible or Inseparable?" in Harry M. Trebing ed., Communications and Energy in Transition (1981), with Nina W. Cornell and Peter R. Greenhalgh.

"An Empirical Survey of Price Fixing Conspiracies," Journal of Law and Economics (1974), with George A. Hay. Reprinted in Siegfried and Calvari, ed., Economic Analysis and Antitrust Law (1978) and the Journal of Reprints for Antitrust Law and Economics (1980).

TESTIMONY:

Federal Communications Commission, Application of Cellular Communications of Cincinnati, July 25, 1983 (with Robert J. Reynolds): Optimum firm size in the cellular radio market

Maryland Public Service Commission, Case No. 0450-Phase II, May 31, 1983: Access charge implementation issues

New York Public Service Commission, Case No. 28425, June 1983: Access charge implementation issues

Florida Public Service Commission, Docket No. 820537-TP, June 30, 1983, November 4, 1983, April 9, 1984, June 4, 1984, September 7, 1984, October 25, 1984 and August 15, 1985: Access charge implementation issues

Pennsylvania Public Utility Commission, Docket No. R-832, August 5, 1983: Pennsylvania Bell Rate Case

New Jersey Board of Public Utilities, Docket No. 83-11, February 20, 1984: Access charge implementation issues

New York Public Service Commission, Case 88-C-102, March 2, 1990: Alternative Operator Service Issues

California Public Service Commission, A.90-07-015, July 10, 1990: AT&T Deregulation

New York Public Service Commission, Case 28425, October 8, 1990: IntraLATA Dial 1 Competition

Massachusetts Department of Public Utilities, DPU 90-133, October 17, 1990: AT&T Deregulation

Georgia Public Service Commission, 3905-U, November 16, 1990: Incentive Regulation

California Public Service Commission, I-87-11-033, September 23, 1991: IntraLATA Competition

Georgia Public Service Commission, Docket No. 3987-U, January 31, 1992: Cross-Subsidy

Colorado Public Utilities Commission, Docket No. 92R-050T, August 24, 1992: Collocation

Connecticut Department of Public Utility Control. Docket No. 9106-10-06, September 25, 1992: Infrastructure

Maryland Public Service Commission, Case No. 8584, Phase II, July 21, 1995: Local Competition.

Connecticut Department of Public Utility Control, Docket No. 95-06-17, September 8, 1995: Local Competition .

Federal-State Joint Board on Universal Service, CC Docket No. 96-45, June 5, 1996: Cost Modeling.

Colorado Public Utilities Commission, Docket No. 96A-287T, September 6, 1996: Arbitration.

Oregon Public Service Commission, Dockets ARB 3 & 6, October 14, 1996: Arbitration.

Hawaii Public Utilities Commission, October 17, 1996: Arbitration.

Michigan Public Service Commission, October 24, 1996: Arbitration.

New York Public Service Commission, Case No. 28425, May 9, 1997: Access charges.

Colorado Public Utilities Commission, Docket No. 97F-175T, July 18, 1997: Access Charges.

Utah Public Service Commission, Docket No. 97-049-08, October 2, 1997: Access charges.

Connecticut Department of Public Utility Control, Docket No. 96-04-07, February 10, 1998: Access Charges.

CERTIFICATE OF SERVICE

I, Tanya Butler, hereby certify that on this 25th day of June, 1998, a copy of the foregoing "**COMMENTS OF THE ASSOCIATION OF COMPETITIVE TELECOMUNICATION PROVIDERS**" was served via first class mail, postage prepaid or by hand (*) on the following:

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